

THE UNIVERSITY OF WESTERN ONTARIO  
DEPARTMENT OF PHILOSOPHY  
GRADUATE COURSE OUTLINE

**PHILOSOP 9225A: Scientific Realism (Philosophy of Science )**

Fall Term 2016 Instructor: Stathis Psillos

Location: STVH 2150H

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**Course outline**

This course will be on scientific realism. We will use my books *Scientific Realism: How Science Tracks Truth* (Routledge 1999) (SRhSTT) and *Knowing the Structure of Nature* (Palgrave 2009) (KtSoN) as the basis for a thorough and detailed examination of the various aspects of the scientific realism debate, looking into epistemological, metaphysical and semantic issues. The focus will be recent developments and arguments.

**Emphasis will be given to the following issues:**

The historical development of the scientific realism debate in the twentieth century  
The explanationist defence of realism and the various criticisms.  
The structuralist turns in the early and late twentieth century  
Various forms of empiricism and their attitude towards scientific realism  
The role of the history of science in the scientific realism debate  
The atomism debate in the late nineteenth century

**TEXTS:** Readings will be available through a dropbox folder.

**COURSE REQUIREMENTS:** This is an intensive course. There will be nine sessions in the space of three weeks. Then there will be two or three more sessions over skype with student presentations. All those who take it for credit are required to write two essays. One short essay (about 2000 words) which will be delivered by the end of October and one standard size essay (about 4000 words) to be delivered by the end of November. They are also required to make a presentation of a paper.  
The course will start on Monday the 3<sup>rd</sup> of October.

**PLAN OF THE COURSE**

**Session Dates (updated September 29<sup>th</sup>):**

Mon. Oct. 3<sup>rd</sup> 9 a.m.

Tues. Oct. 4<sup>th</sup> 10:30 a.m.

Fri. Oct. 7<sup>th</sup> 11:30 a.m.

Tues. Oct. 11<sup>th</sup> 10:30 a.m.

Wed. Oct. 12<sup>th</sup> 9 a.m.

Fri. Oct. 14<sup>th</sup> 11:30 a.m.

Mon. Oct. 17<sup>th</sup> 9 a.m.

Tues. Oct. 18<sup>th</sup> 10:30 a.m.

Fri. Oct. 21<sup>st</sup> 11:30 a.m.

**1. Introduction-Overview. What is Scientific Realism?**

SRhSTT, introduction

KtSoN, Introduction, chapter 1

S. Psillos 'The Realist Turn in the Philosophy of Science' (forthcoming)

**2. Realism and the Atomism Debate: a conceptual geography**

Peter Achinstein (2002) 'Is there a valid experimental argument for scientific realism?'

*Journal of Philosophy* 99: 470-495

Van Fraassen, Bas (2009) 'The Perils of Perrin, in the Hands of Philosophers'.

*Philosophical Studies* 143: 5-24.

Psillos, S. (2011) 'Moving Molecules Above the Scientific Horizon: On Perrin's Case for Realism' *Journal for General Philosophy of Science*, December.

### **3. Empiricism and Scientific Realism**

SRhSTT, chapter 2

Schlick M. *Positivism and Realism* in Alfred J. Ayer (Ed.) *Logical Positivism*, 1960, Glencoe, NY: Free Press.

Feigl, H. (1950) Existential hypotheses: Realistic versus phenomenalistic interpretations. *Philosophy of Science*, 17, 35–62

Van Fraassen (1980) *The Scientific Image*.

Psillos, S. (2011) 'Choosing the Realist Framework', *Synthese*, 190: 301-316

### **4. The No Miracles Argument**

SRhSTT chapter 4

Boyd, Richard (1983), 'On the Current Status of the Issue of Scientific Realism', *Erkenntnis*, 19: 45–90.

Psillos, S. (2011) 'The Scope and Limits of the No-Miracles Argument' in Friedrich Stadler *et al.* (eds) *The Philosophy of Science in a European Perspective*, Vol. II, pp. 23-35, Springer

Worrall, John (2011) 'The No Miracles Intuition and the No Miracles Argument', in Friedrich Stadler *et al.* (eds) *The Philosophy of Science in a European Perspective*, Vol. II, pp. 11-22, Springer

Alan Musgrave (2006-7) 'The 'Miracle Argument' For Scientific Realism', *The Rutherford Journal*, 2

### **5. Realism and the History of Science I**

SRhSTT, chapter 5

Laudan, Larry (1981), 'A Confutation of Convergent Realism', *Philosophy of Science*, 48: 19–48.

Poincare, H. (1902) *Science & Hypothesis*, chapter 10

Worrall, John (1989) 'Structural Realism: The Best of Both Worlds?', *Dialectica*, 43: 99–124.

### **6. Realism and the History of Science II**

Timothy D. Lyons (2006) 'Scientific Realism and the Stratagema de Divide et Impera' *Brit J Philos Sci*; 57: 537 - 560.

P. Kyle Stanford (2006) *Exceeding our Grasp*, chapter 6

Hasok Chang (2003) "Preservative Realism and Its Discontents: Revisiting Caloric" *Philosophy of Science* 70, pp. 902-912

Various recent articles on the Pessimistic Induction

### **7. Structuralism and Realism**

SRhSTT, chapter 7

KtSoN, chapters 7, 9

van Fraassen BC (2006) "Structure: Its shadow and substance" *BRIT J PHILOS SCI* 57: 275-307

Demopoulos, William, (2003) "On the Rational Reconstruction of Our Theoretical Knowledge", *The British Journal for the Philosophy of Science*, 54, 371-403

### **8. Ontic Structural Realism**

KtSoN, chapter 8

French, Steven (2006) "Structure as a Weapon of the Realist" *Proceedings of the Aristotelian Society*, 106, 2006

James Ladyman, (2007) *Don Ross Every Thing Must Go Metaphysics Naturalized*, Oxford University Press— chapters 2 & 3

French Steven (2014) *the structure of the World*, chapters 1, 7, 8, 9, 10

### **9. Current forms of Anti-Realism**

KtSoN, chapter 4

P. Kyle Stanford (2006) *Exceeding our Grasp*, Oxford University Press, chapters 1, 2, 3